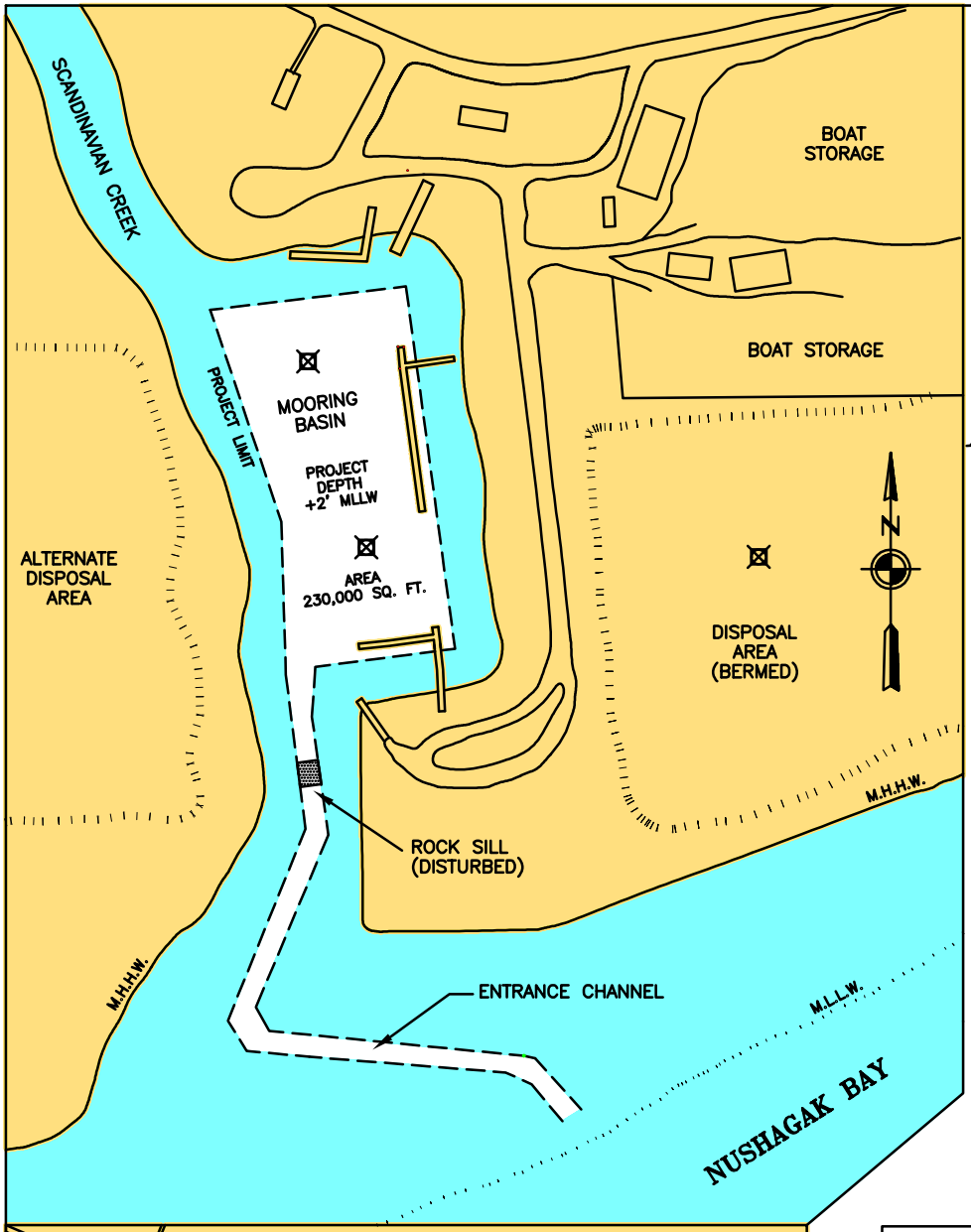
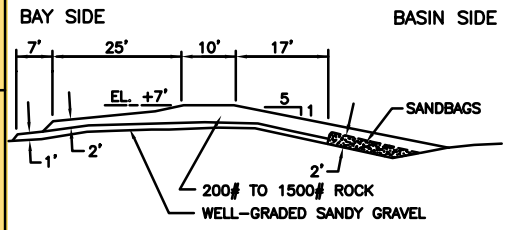
DILLINGHAM HARBOR

CORPS OF ENGINEERS

U.S. ARMY





DETAIL OF ROCK SILL

NOT TO SCALE

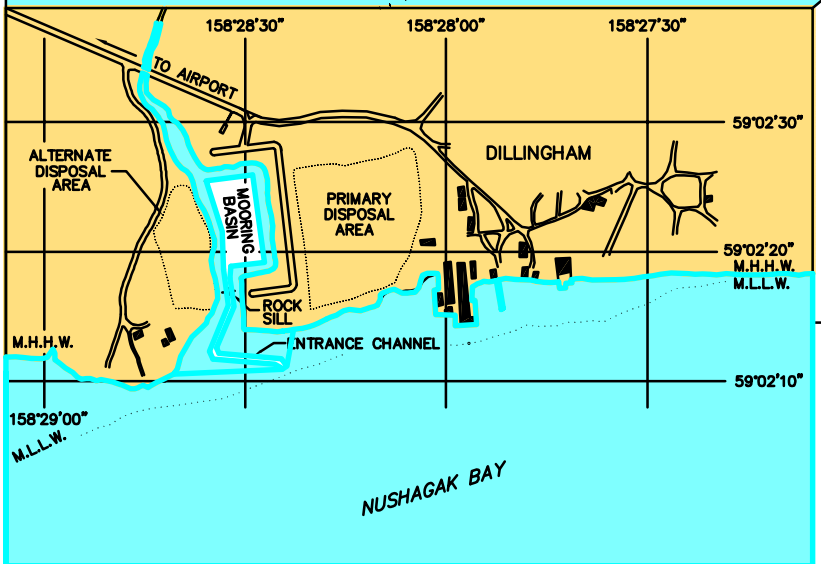
NOTE: SECTION TAKEN ALONG CHANNEL CENTERLINE.

NOTES

1. SOUNDINGS AND ELEVATIONS ARE BASED ON MEAN LOWER LOW WATER (MLLW = 0.0').
2. THIS LOCALITY IS SHOWN ON USC & GS CHART NOS. 16011 AND 16322.

LEGEND

⊠ SEDIMENT SAMPLE LOCATION



VICINITY MAP

500 0 500 1000 1500 2000

SCALE IN FEET

METRIC CONVERSIONS					
FEET	METERS	FEET	METERS	FEET	METERS
0.5	0.15	11.0	3.55	20.0	6.10
1.0	0.30	12.0	3.66	21.0	6.40
2.0	0.61	13.0	3.96	24.0	7.32
4.0	1.22	15.0	4.57	50.0	15.54
5.0	1.52	16.0	4.88	100.0	30.48
6.0	1.83	18.0	5.49	300.0	91.44
10.0	3.05	19.0	6.40	700.0	213.36

DILLINGHAM HARBOR ALASKA

REVISED 1996

100 0 100 200 300 400 500 600

SCALE IN FEET

50 0 50 100 150 200

SCALE IN METERS

DILLINGHAM HARBOR, ALASKA
(CWIS NO. 04800, 87319)

Condition of Improvement 30 September 2012

AUTHORIZATION: Rivers and Harbors Act, 3 July 1958 (House Doc. 390, 84th Congress, 2nd Session) as adopted, provides for a small boat basin along Scandinavian Creek of 230,000 square feet at 2 feet above MLLW, an entrance channel 1,100 feet long with a bottom width of 40 feet in Scandinavian Creek, a sheet-pile sill across the basin outlet with a top elevation at 7 feet above MLLW, and an embankment on three sides of the basin to provide protection from the wind.

EXISTING PROJECT:	LENGTH	DEPTH	WIDTH
• Basin	700 ft	+2 ft	650 to 800 ft
• Entrance Channel	1100 ft	varies	40 ft
• Rock Sill (removed to depth of existing bottom).	N/A	+7 ft	N/A

PROJECT USAGE: The harbor provides half-tide access and all-tide moorage for about 320 commercial fishing and recreational craft. Commercial salmon fishing is the cornerstone of the community's economy; subsistence hunting and fishing continue to be vital local activities. Dillingham Harbor provides both moorage and an alternate landing area for lighterage vessels. All transportation to the area is by water or air.

PROGRESS OF WORK:

1960 - Dredging of the basin begins in September and continues until freeze-up in November. The project is 52% complete.
1961 - Design modifications change the sheet-pile sill to a rock sill and move the embankment back from the basin. Dredging of the basin is resumed in May and completed in October. The rock sill is only partially completed; damage by ice occurs during the winter months.
1962 - The basin is found to be silted in. Restoration of the rock sill and dredging of the basin commences in May. The project is completed in July.
1963 - The depth of the project is reduced from +2 feet to +7 feet MLLW due to siltation.
1964 - Maintenance is suspended pending restudy of the project.
1966 - A study of the siltation problem is completed in September.
1967 - A General Design Memorandum is completed and submitted for approval.
1968 - A supplemental design memorandum is approved authorizing re-excavation to project depth and the purchase of a Corps owned dredge.
1969 - Dredging commences in June and continues through October by the Corps' pipeline dredge "Dillingham".
1970 - From this year forward annual maintenance dredging is carried out from May through October as required.
1978 - From this year through 1988 all dredging is performed by the "Dillingham".
1989 - Beginning this year maintenance dredging is accomplished annually by contract.
1993 - Sampling and testing is conducted on the harbor sediments.
1994 - The Corps' project office is leased to the National Guard for a five year period.

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DILLINGHAM HARBOR, ALASKA (continued)

30 September 2012

1999 - Rock from the "disturbed" rock sill is removed from the entrance channel, but only to the depth of the existing bottom.
2001 - A Dredged Material Management Plan is initiated to study alternative disposal methods and sites as a result of the existing Peter Pan site reaching capacity.
2003 - Annual maintenance dredging removes 103,299 cubic yards from the basin area. Alternate disposal sites are under consideration.
2004 - The dredging contractor removes 90,000 cubic yards from the federal basin and entrance channel. In-water disposal was attempted but suspended due to insufficient contractor capability. The Peter Pan site was used for the remainder of the dredging period.
2005 - The annual maintenance dredging effort again reports the removal of 90,000 yards. The open water disposal site is used successfully for the first time. The Dredged Material Management Plan continues with analyses of alternative disposal methods and sites.
2006 - Annual maintenance dredging removes 98,320 cubic yards with a cutterhead and suction pipeline operation. Material is successfully disposed offshore in the turbid open water.
2007 - Maintenance dredging removes 95,000 cubic yards in the annual effort, and disposal is conducted offshore.
2008 - A pre-dredge survey was conducted in May 2008. 91,113 cubic yards of material was removed and a post-dredge survey was conducted in June 2008.
2009 - A pre-dredge survey was completed in late May. Annual maintenance dredging removed approximately 73,000 cubic yards of material with disposal in the Nushagak River site. A post dredge survey was completed in late June.
2010 - A pre-dredge survey was completed in May. The June post-dredge survey indicates that 76,738 cubic yards of material was removed by the annual maintenance dredging effort. Dredged material was placed in the Nushagak River site.
2011 - Hydraulic dredging was conducted in May and June for a total of 86,459 cubic yards removed. Material was placed in the open water site in the Nushagak River.
2012 - Portable Hydraulic Dredging completed the 4th year of a 5-year contract, performing annually maintenance dredging in June with the removal of 91, 947 cubic yards.

COST TO DATE:

CG Appropriation 87319	$1,060,678
CG Costs 87319	$1,060,678
CG Appropriation 04800	$0
CG Costs 04800	$0
O&M Appropriation 04800	$20,597,678
O&M Costs 04800	$20,448,872
O&M Contributed Appropriation 04800	$1,700
O&M Contributed Costs 04800	$1,700

RANGE OF TIDE:

Mean Range	Diurnal Range	Extreme Range
15.9'	20.2'	28.4'

Continues on page 1-8b

DILLINGHAM HARBOR, ALASKA (continued)

30 September 2012

CONTROLLING DEPTH: A depth of +4.4 feet MLLW controls in the basin and +8.2 feet MLLW controls for the entrance channel at the end of the 2012 dredging season. This project is subject to rapid shoaling due to sedimentation from Nushagak Bay.

DREDGED QUANTITIES AND CONTRACT COSTS

Item	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012
Quantity Cubic Yards	95,000	91,113	76,738	84,467	86,459	91,947
Contract Cost	$524,300	$524,813	$726,858	$749,833	$753,324	$761,184

MAINTENANCE DREDGING SUPPLEMENT:

A. General

1. Dredging of the Dillingham small boat harbor and entrance channel is carried out by contract for a two or three year term.
2. Shoaling is heavy throughout the basin area and the upper entrance channel.
3. The window for dredging activity runs from 15 May to 15 July, but usually dredging activity occurs from "ice out" to an early completion about the end of the first week in June to avoid conflicts with the salmon fishing fleet.
4. Dredging is accomplished with a hydraulic cutterhead and pipeline suction dredge which conveys the effluent to an open water site.

B. Sampling & Testing

1. A total of thirteen soil and sediment samples were collected, August 2008. These samples were collected to the immediate north of the breakwater site and from the shoreline in the area of the proposed revetments.
2. Chemical analysis was performed using (6) test methods as outlined with results below:

Method AK101	Gasoline Range Organics	None detected (ND) or below minimum levels
Method AK102/103	Diesel Range Organics/ Residual Range Organics	ND or below minimum levels
Series 6000-7000's	(8) RCRA Metals	(10) of (10) detected Arsenic 6.4 – 9.1 ppm*; all others below minimum levels

* Arsenic exceeded ADEC criteria in every sample but did not exceed PSDDA criteria.

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DILLINGHAM HARBOR, ALASKA (continued)

30 September 2012

Method 8260B	Volatile Organic Compounds	ND or below minimum levels
Method 8081A	Pesticides	ND or below minimum levels
Method 8270C SIM	Polycyclic Aromatic Hydrocarbons	ND or below minimum levels
Method 8270C	Semi-volatile Organic Compounds	ND or below minimum levels
Method E160.3	Percent Moisture	7.1 - 44 %

Project limits are defined by ADEC 18 AAC 75 Method 2 Table B1 and B2 Cleanup Level and PSDDA Users Manual Table 5-1 Screening Level.

C. Disposal

1. Until 2004, the effluent was traditionally conveyed via portable pipeline from the dredge plant to upland, bermed disposal sites east and west of the harbor. An open water site immediately south of the entrance channel approximately 800 feet offshore was attempted in 2004, but failed with insufficient pipeline length and poor anchoring methodology. In-water disposal was successfully achieved in 2005. Turbidity monitoring of the open water site was continued in 2006.
2. A 20-year Dredged Material Management Plan (DMMP) was under development for the long term disposal needs of the harbor and planned for implementation in 2009.
3. The DMMP Preliminary Assessment in September 2007 states that a DMMP will not be written because in-water disposal is expected to provide disposal capacity in excess of 20 years.

D. Environmental Permits and Reports

1. A Final Environmental Impact Statement (FEIS) for operation and maintenance was circulated in June 1974. Environmental Assessments for maintenance dredging were completed in January 1978, November 1979, December 2001, December 2002, January 2004, September 2005, and most recently in September 2007 by the Corps of Engineers. Findings of No Significant Impact (FONSI's) for maintenance dredging were signed in June 1974, January 1978, March 1980, February 2002, March 2003, May 2004, March 2006, and most recently in April 2008. A DMMP Preliminary Assessment for maintenance dredging and in-water disposal was completed in September 2007.

2. The following permits or authorizations have been issued for current dredging operations:

Agency Name	Purpose	Date of Issue	Date of Expiration*
DNR	AK Coastal Management Program Review	October 15, 2007 & February 2, 2006	N/A
DNR	Letter of Entry	November 3, 2008	November 2, 2013

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DILLINGHAM HARBOR, ALASKA (continued)

30 September 2012

Agency Name	Purpose	Date of Issue	Date of Expiration*
ADEC	Clean Water Act - Section 401, Water Quality Certificate	April 15, 2008	April 15, 2013
NMFS	Section 7 Consultation - Endangered Species Act	September 17, 2007	N/A
USFWS	Section 7 Consultation – Endangered Species Act	April 23, 2007	N/A
ADF&G	Fish Habitat Permit	October 17, 2008	December 31, 2013
ADF&G	Fish Habitat Permit Amendment I	May 18, 2009	December 31, 2013

*A substantial change in project scope would trigger additional agency review and project authorization. The Corps of Engineers, DNR, ADEC, and ADF&G will re-evaluate in-water disposal for adverse environmental impacts after ten years (2019), or sooner if major changes in disposal methods or unexpected environmental impacts occur.

3. Water Quality: Five physical parameters were measured at three locations in the harbor, May 1992; temperature, pH, salinity, conductivity, and oxidation-reduction potential were measured in the field.

4. Water Quality Continued: Water turbidity data was collected before and during in-water disposal in the 2005 and 2006 dredging season.

Dillingham Small Boat Harbor, Dillingham, Alaska

Dillingham SBH dredging in 2010.

Dillingham Harbor aerial taken in 2004.

Dillingham Small Boat Harbor, Dillingham, Alaska

Dillingham overhead picture taken in the summer of 2005.